

## CLAIMS

Having thus described the aforementioned invention, we claim:

1        1. An apparatus for electrically earthing a load-side conductor in a  
2 controller, said apparatus comprising:

3              a base;

4              a lug electrically connected to said load-side conductor and fixedly  
5 attached to said base;

6              an earthing bar adapted to contact said lug and provide a ground path  
7 from said lug, said earthing bar adapted to move between a charged position  
8 and an earthed position;

9              a ground connection electrically connected to said earthing bar and  
10 adapted to earth said earthing bar;

11             a spring having a first end and a second end, said first end engaging said  
12 earthing bar and said second end engaging said base, said spring providing a  
13 motive force for moving said earthing bar from said charged position to said  
14 earthed position;

15             a charging mechanism for compressing said spring and moving said  
16 earthing bar from said earthed position to said charged position;

17             an actuating mechanism for releasing said spring and causing said  
18 earthing bar to move from said charged position to said earthed position; and

19             an operator for tripping said actuating mechanism.

1        2. The apparatus of Claim 1 wherein said lug includes a bevel against  
2 which said earthing bar rests when said earthing bar is in said earthed position.

1        3. The apparatus of Claim 1 wherein said base is a plate having a central

1       4.     The apparatus of Claim 1 wherein said lug includes a flat surface  
2     adapted to receive a load-side terminal.

1       5.     The apparatus of Claim 1 wherein said lug is adapted to receive a  
2     line-side conductor.

1       6.     The apparatus of Claim 1 further comprising a tang on said lug,  
2     said tang adapted to fixedly engage a corresponding slot in said base.

1       7.     The apparatus of Claim 1 wherein said operator includes an  
2     indicator with a first indication corresponding to said earthing bar in said  
3     charged position and a second indication corresponding to said earthing bar in  
4     said earthed position

1       8.     The apparatus of Claim 1 wherein said actuating mechanism  
2     includes

3       a first member connected to a second member at a first pivot which is  
4     constrained to a slot in a third member,

5       said second member has a distal end opposite said first pivot, said distal  
6     end pivotably connected to a sliding member,

7       said sliding member fixedly attached to said earthing bar,

8       said first member having a central pivot held in fixed spatial relation to  
9     said base,

10      said third member engaging said charging mechanism,

11      whereby said first member and said second member are held in a fixed  
12     position with said spring compressed.

1       9.     The apparatus of Claim 8 wherein, with said earthing bar in said  
2     charged position,

3        said first pivot is fixedly positioned slightly off a line connecting said  
4        central pivot of said first member and said distal end of said second member.

1              10. The apparatus of Claim 8 wherein said first and second members  
2        are adapted to hold said earthing bar in said charged position whereby said first  
3        pivot is fixedly positioned slightly off a line connecting said central pivot of said  
4        first member and said distal end of said second member.

1              11. The apparatus of Claim 8 wherein said first and second members  
2        are adapted to hold said earthing bar in said charged position whereby said first  
3        and second members form an obtuse angle and said first pivot is fixedly  
4        positioned.

1              12. The apparatus of Claim 8 wherein said first and second members  
2        are adapted to permit said earthing bar to be in said earthed position whereby  
3        said first and second members form an acute angle.

1              13. An apparatus for electrically earthing a load-side conductor in a  
2        controller, said apparatus comprising:

3              a base;

4              a lug electrically connected to said load-side conductor and fixedly  
5        attached to said base, said lug including a bevel;

6              an earthing bar adapted to contact said lug and provide a ground path  
7        from said lug, said earthing bar adapted to move between a charged position  
8        and an earthed position;

9              a ground connection electrically connected to said earthing bar and  
10        adapted to earth said earthing bar;

11              a spring having a first end and a second end, said first end engaging said  
12        earthing bar and said second end engaging said base, said spring providing a  
13        motive force for moving said earthing bar from said charged position to said  
14        earthed position;

15           a charging mechanism for compressing said spring and moving said  
16   earthing bar to said charged position;

17           an actuating mechanism for releasing said spring and causing said  
18   earthing bar to move to said earthed position; and

19           an operator for tripping said actuating mechanism.

1           14. An apparatus for electrically earthing a load-side conductor in a  
2 controller, said apparatus comprising:

3           an earthing member connected to ground, said earthing bar adapted to  
4 move between a charged position and an earthed position in which said load-  
5 side conductor is earthed;

6           a spring providing a motive force for moving said earthing bar from said  
7 charged position to said earthed position, wherein said spring is compressed in  
8 said charged position;

9           a sliding member fixedly attached to said earthing member;

10          a first member having a central pivot held in fixed spatial relation; <sup>2</sup> *to what*

11          a second member having a first distal end connected to said first member  
12 at a first pivot and an opposite distal end connected to said sliding member at a  
13 second pivot; and

14          a third member defining a slot, said first pivot constrained to said slot;

15          whereby movement of said third member causes said first pivot to toggle  
16 between a first position corresponding to said charged position and a second  
17 position corresponding to said earthed position; *(7)*

1           15. An apparatus for electrically earthing a load-side conductor in a  
2 controller, said apparatus comprising:

3           a means for electrically connecting said load-side conductor to a lug;

4           a means for earthing said lug;

5           a means for storing energy; and  
6           a means for releasing said stored energy.

1       16. The apparatus of Claim 15 wherein said means for earthing  
2     includes

3           a means for contacting said lug with an earthing conductor; and  
4           a means for earthing said earthing conductor.

1       17. The apparatus of Claim 15 wherein said means for storing energy  
2     includes

3           a means for compressing a spring; and  
4           a means for holding said spring in a compressed state.

1       18. The apparatus of Claim 15 whereby said means for releasing said  
2     stored energy includes

3           a means for decompressing a compressed spring.